

Kentucky Portion of the Louisville 1-Hour Ozone Maintenance Area

2003 Update¹

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¹ This document (the 2003 Revision 1 document) represents the first revision of the maintenance plan for the Kentucky portion of the Louisville 1-hour ozone maintenance area and the regional motor vehicle emissions budgets. Included in the 2003 Revision 1 document are revisions and additions to the June 26, 2001, document *Kentucky Portion of the Louisville 1-Hour Ozone Nonattainment Area, Request for Redesignation to Attainment* (2001 document). Because the 2003 Revision 1 document should be taken in the context that it adds to the 2001 document, the entire (revised) Table of Contents, and lists of Tables and Appendices are included in the 2003 Revisions 1 document. The page numbers for the new or revised sections of the 2003 Revision 1 document are listed as ARevision 1 [page number]. You are encouraged to review the 2001 document, which can be found on the Internet at http://www.apcd.org/sip/redesig_req.pdf. The 2001 document will provide explanation and context for some of the material that is included in the 2003 Revision 1 document.

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2. April 2003 changes to APCD MOBILE6 modeling
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4. MOBILE6 Inventories (4/23/2003 SIP Work)
5. *MOBILE6 SIP Conformity Modeling Suite, Emission Factors for Onroad Mobile Sources, Release Version 4/23/2003*
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N Public Review Process: 2003 Update

1. Legal Notice, to be published Thursday, May 15, 2003, and Thursday, June 5, 2003, in *The Courier-Journal*

Kentucky Portion of the Louisville 1-Hour Ozone Maintenance Area 2003 Update

4.0 Improvement in Air Quality

Table 4.1a
Summary of Ozone Exceedances - 2003 Update

Monitor	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
New Albany	*	*	*	*	*	1	1	2	2 ^{T1}	0	0	0	1
Charlestown	2	3	0	3	3	2	0	3	3	0	0	0	0
WLKY	0	0	0	2	0	0	1	0	1	0	0	0	0
Buckner	2	1	0	0	0	0	0	2	1	1	0	0	0
Watson	*	*	0	0	1	1	1	0	1	0	0	0	0
Bates	0	0	0	0	0	1	0	1	1 ^{T2}	0	0	0	0
Shepherdsville	0	1	0	0	0	0	0	1	0	0	0	1	1

* No monitor was operated at this location during this year.

^{T1} One of these exceedances occurred on May 14, 1998. This exceedance was not flagged by IDEM as an exceptional event caused by transported pollution from the Mexican fires.

^{T2} An exceedance was also monitored on May 14, 1998. However, this exceedance was flagged by DAQ, pursuant to approval from EPA in a February 10, 1999, letter⁶, as an exceptional event caused by transported pollution from the Mexican fires.

(Footnote 6 from 2001 document)

⁶ A copy of this February 10, 1999, letter from Ms. Linda Anderson-Carnahan, Chief, Air Planning Branch, EPA Region 4, to Mr. Larry Garrison, Manager, Technical Services Branch, DAQ, is included in *Appendix C: Air Monitoring Information*.

4.1 2003 Update

Revised Table 4.1a *Summary of Ozone Exceedances* includes the exceedances of the 1-hour ozone standard that occurred in 2001 and 2002. Ambient monitoring for the Louisville Maintenance Area continues to show attainment of the 1-hour ozone standard.

Kentucky Portion of the Louisville 1-Hour Ozone Maintenance Area

2003 Update

7.0 Maintenance Plan

Criterion 5: The EPA has fully approved a maintenance plan, including a contingency plan, for the area under section 175A.

The required maintenance plan must become part of the State Implementation Plan (SIP) and provide for maintenance of the air quality in the affected area for at least 10 years after redesignation. Kentucky has chosen 2012 as the end year of the maintenance plan for the Louisville area.

The maintenance plan includes the following components:

- % 1999 (attainment year) baseline VOC and NO_x emissions inventories,
- % projected interim VOC and NO_x emissions inventories for generally every three years (2002, 2005, and 2008),
- % projected VOC and NO_x emissions inventories for the out year of the maintenance plan (2012),
- % a commitment to maintain the existing monitoring system, and
- % contingency measures that will become effective should the area experience subsequent violations of the 1-hour ozone standard.

The general approach used for the maintenance plan to demonstrate that attainment of the 1-hour ozone standard will continue to be maintained is based upon restricting the future anthropogenic emissions to a level that is representative of attainment of the standard. If these future emissions are no greater than the actual emissions during a year in which attainment of the standard was monitored, then it is assumed that attainment of the standard will also be achieved in future years.

7.9 2003 Update

The future mobile source emissions used in the maintenance plan and motor vehicle emission budgets (MVEBs) were calculated using MOBILE5b and credit was taken for the federal Tier 2/Sulfur Program (VOC for Jefferson County and a portion of Bullitt, and Oldham Counties; NO_x for Jefferson County). Due to potential inaccuracies involved with using interim approximations based on national defaults and differing baselines to simulate emission factors that would result from proposed changes in MOBILE to be incorporated in MOBILE6, the U.S. Environmental Protection Agency (EPA) recognized these approximations may change once MOBILE6 became available when determining credit for the federal Tier 2/Sulfur Program. For this reason, the EPA established a policy that MVEBs would not be approved by the EPA as being adequate for purposes of conformity unless the SIP also included an enforceable commitment to revise and resubmit the MVEBs using MOBILE6 methods within one year after the EPA releases MOBILE6 or, alternatively, within two years following the release of MOBILE6 provided that transportation conformity is not determined in the Louisville area without adequate MOBILE6-based MVEBs during the second year. The Kentucky Division for Air Quality (DAQ), the Greater Louisville Air Pollution Control District (APCD), and the Kentuckiana Regional Planning and Development Agency (KIPDA) committed to revising and resubmitting the MVEBs using MOBILE6 within these time periods. This would also include revising the mobile source emissions in the maintenance plan and demonstrating that the maintenance plan continued to show that anthropogenic emissions of VOC and NO_x during the maintenance plan period would not increase beyond the level of emissions during the base year.

In addition to determining mobile source emissions with MOBILE6 (the most recent version, MOBILE6.2, was used), KIPDA, APCD, and DAQ have also updated several key data parameters and modeling techniques. Those changes are summarized below.

1. KIPDA: To address concerns expressed about the speed estimation procedures used, the following changes have been made:
 - A. The methodology and equations of the Highway Economic Reporting System (HERS) have been used to provide empirical data for speed adjustment of roadways with urban functional classifications,
 - B. Data from the Automatic Continuous Traffic Recorders (ATRs) of the Kentucky

Transportation Cabinet (KYTC) have been used to provide empirical data for speed adjustment of roadways with rural functional classifications, and

- C. Data from the local KYTC ATRs have been used to calculate the vehicle-miles-traveled (VMT) and speeds on an hourly basis.

A detailed description of the changes made by KIPDA is contained in the document *KIPDA Method for Speed Estimation For the 2003 Mobile Source Budget Update And Subsequent Conformity Determinations*, which is included in *Appendix M: Maintenance Plan: 2003 Update*.

- 2. APCD: To ensure that the VOC, NO_x, and CO emissions remain constant when using MOBILE6.2 as opposed to MOBILE6.0 and to use newer data supplied by the EPA and KIPDA, the following changes have been made:
 - A. Fuel parameters have been added or modified to enable new AIR TOXICS functionality of MOBILE 6.2 without modifying consensus planning assumptions for fuel types and control programs, so that VOC, NO_x, and CO emissions factors consistent with equivalent MOBILE6.0 work are generated by MOBILE6.2,
 - B. The VMT mix now has annual variations,
 - C. Speed VMT and Facility VMT distribution tables have been significantly revised by KIPDA to address concerns raised by the EPA regarding the speed estimation procedures, and
 - D. The VMT weighting accounting for the effects of the various inspection and maintenance programs in the Louisville area have been updated.

A detailed description of the changes made by the APCD is contained in the document *April 2003 changes to APCD MOBILE6 modeling*, which is included in *Appendix M*.

- 3. DAQ: The following changes have been made:
 - A. The minimum and maximum temperatures were updated using the three most recent years of data available, 1999, 2000, and 2001. These temperature values were last developed in 1992.
 - B. The speed data used in MOBILE 6.2 is the same as that used in the redesignation request using MOBILE5b except for Rural Local at 12.9 mph, Urban Local at 12.9

mph, and Ramp at 34.6 mph.

- C. A new requirement with MOBILE6.2 for freeway VMT distribution percentages, which apply to the Rural Interstate, Urban Interstate, and Urban Freeway Road Classifications had to be implemented. Through consultation with the KYTC, it was advised that the MOBILE6.2 default values of "92.0 0.0 0.0 8.0" would best-represent the conditions for the one-hour ozone maintenance portions of Bullitt and Oldham Counties. These values represent a ramp percentage equal to 8% of all Freeway Road Classifications.
- D. The DAQ has historically used 12 Road Classifications (6 Rural, 6 Urban) for highway mobile source emission model runs. For MOBILE6 (MOBILE6.2 is the latest), a Ramp Road Classification is introduced, for a Road Classification total of 13. In MOBILE6, there are 4 Roadway Classifications: Freeway, Arterial, Local, and Ramp. Each Roadway Classifications must be associated with each of the 13 Road Classifications. Based on a combination of EPA guidance (User's Guide to MOBILE6.0 B January 2002, consultation with EPA staff), extensive MOBILE6 model training, and consistency of historical model runs, the following associations were used between the DAQ's 13 Road Classifications and the 4 MOBILE6 Roadway Classifications:

DAQ= 13
ROAD CLASSIFICATIONS

Rural Interstate
Rural Principal Arterial
Rural Minor Arterial
Rural Major Collector
Rural Minor Collector
Rural Local

Urban Interstate
Urban Freeway
Urban Principal Arterial
Urban Minor Arterial
Urban Collector
Urban Local

Ramp

MOBILE6
ROADWAY CLASSIFICATIONS

Freeway
Arterial
Arterial
Arterial
Arterial
Local

Freeway
Freeway
Arterial
Arterial
Arterial
Local

Ramp

A detailed description of the changes made by the DAQ is contained in the document *Methodology Assumptions for MOBILE6.2 Highway Mobile Source Emissions Budget, Maintenance Portions of Bullitt and Oldham Counties*, which is included in *Appendix M*.

Table 7.1a - 2003 Update shows the revised summary of the 1999 actual VOC and NO_x emissions. The following documents, which contain the details of the revised mobile source emissions, are included in *Appendix M*:

1. *MOBILE6 Inventories (4/23/2003 SIP work)*
2. *MOBILE6 SIP Conformity Modeling Suite, Emission Factors for Onroad Mobile Sources, Release Version 4/23/2003*
3. Compact Disc: *MOBILE6 SIP Conformity Modeling Suite, Emission Factors for Onroad Mobile Sources, Summer Only, Release Version 4/23/2003*
4. *Highway Mobile Source Emissions Budget for Portions of Bullitt and Oldham Counties, Using MOBILE6.2*

Also included in *Appendix M* is Table 7.1ac - 2003 Update that shows both the original (2001 document) and revised (2003 Revision 1 document) 1999 VOC and NO_x emissions.

Table 7.1a
1999 Baseline Actual VOC and NO_x Emissions Inventories - 2003 Update

Area	Source Category	VOC tpsd	NO _x tpsd
Jefferson County	Point - Actual	31.32	116.74
	Point - ERCs	0.00	0.00
	Area	17.18	0.75
	Mobile	35.76	81.82
	Nonroad	13.03	18.40
	Total	97.29	217.71
Maintenance portion of Bullitt County	Point	0.17	0.01
	Area	0.93	0.03
	Mobile	2.06	3.05
	Nonroad	1.06	0.78
	Total	4.22	3.87
Maintenance portion of Oldham County	Point	0.03	0.11
	Area	0.83	0.03
	Mobile	1.74	2.39
	Nonroad	0.98	0.77
	Total	3.58	3.30
Total for KY portion of Louisville 1-hr O ₃ maintenance area	Point	31.52	116.86
	Area	18.94	0.81
	Mobile	39.56	87.26
	Nonroad	15.07	19.95
	Total	105.09	224.88

See the 2001 document for the notes associated with Table 7.1

Tables 7.2a - 2003 Update and 7.3a - 2003 Update show the projection of emissions of VOC and NO_x, respectively, for the maintenance plan interim years 2002, 2005, and 2008 and the last year of the maintenance plan, 2012. Included in *Appendix M* are Tables 7.2ac - 2003 Update and 7.3ac - 2003 Update that show both the original and revised VOC and NO_x, respectively, emission projections.

Assumptions used regarding Inspection and Maintenance (I/M) programs:

1. **Jefferson County, Kentucky:** In the original maintenance plan, the list of continued emission reduction programs included the improved basic Vehicle Emissions Testing (VET) Program in Jefferson County. The effect of the legislation enacted by the Kentucky General Assembly in 2002, codified as KRS 77.320(1), is that the VET Program will end by November 1, 2003. Because of this legislation, the most appropriate planning assumption is that the VET Program will not be in operation starting November 1, 2003. Therefore, the projected mobile source emissions for Jefferson County for the years 2005, 2008, and 2012 in the revised maintenance plan do not include any emission reductions attributed to the VET Program. See the discussion later in this document for an explanation of the treatment of the VET Program itself with respect to the Kentucky SIP.
2. **Clark and Floyd Counties, Indiana:** In 2003, the Indiana Legislature passed a bill that would end the Indiana inspection and maintenance (I/M) program in Clark and Floyd Counties. On May 9, the Indiana governor vetoed that bill. The Indiana Legislature is scheduled to meet on June 19, 2003, and could vote to override the Governor's veto. Therefore, the final fate of this bill may not be known until after the public hearing on the proposed maintenance plan and motor vehicle emission budgets revision.

The Indiana Department of Environmental Management (IDEM) has decided that the most prudent course of action is to make the conservative planning assumption that no emission reduction credit attributed to the Indiana I/M program should be taken for projected mobile

source emissions after 2006. Therefore, mobile source emission reductions attributed to the Indiana I/M program that would have been expected to occur in Jefferson County have been removed from the 2008 and 2012 projected emission inventories. This increases the Jefferson County mobile source VOC emissions by 0.13 and 0.11 tons per summer day for 2008 and 2012, respectively, and the Jefferson County mobile source NO_x emissions by 0.11 tons per summer day for both 2008 and 2012. The DAQ did not apply any emission reduction credit, due to the Indiana I/M program, for the portion of vehicle miles traveled in Bullitt and Oldham Counties by vehicles that would have been tested by the Indiana I/M program. Therefore, there is no comparable increase in the revised mobile emissions determined by the DAQ for Bullitt and Oldham Counties.

A maintenance demonstration requires a comparison of the projected emissions inventories for each of these years with the baseline emissions inventories. If the projected emissions remain at or below the baseline (attainment year) emissions, then there is a demonstration of maintenance. Also, if the projected emissions are below the baseline emissions, then the difference between the projected emissions and the baseline emissions represents a growth allowance. Emissions would be allowed to grow by that amount and the area would still be in compliance with its maintenance plan.

It can be seen from Tables 7.2a and 7.3a that there is a calculated growth allowance for both VOC and NO_x for each year in the maintenance plan.

Table 7.2a
Louisville 1-Hour Ozone Maintenance Area
Maintenance Plan VOC Emissions (tons per summer day) - 2003 Update
Without Emission Reduction Credits for VET Program after 2003 or Indiana I/M after 2006

County	Source Category	1999	2002	2005	2008	2012
Jefferson County	Point - Actual	31.32	31.06	31.06	30.96	30.65
	Point - ERCs ⁹	0.00	0.66	0.66	0.66	0.66
	Area	17.18	17.30	17.41	17.51	17.62
	Mobile	35.76	27.75	23.94	18.71	13.57
	Nonroad	13.03	12.99	12.94	12.90	12.86
	Total	97.29	89.76	86.01	80.74	75.36
Maintenance portion of Bullitt County	Point	0.17	0.18	0.18	0.18	0.18
	Area	0.93	0.95	0.99	1.05	1.08
	Mobile	2.06	1.69	1.45	1.25	1.04
	Nonroad	1.06	1.11	1.16	1.21	1.24
	Total	4.22	3.93	3.78	3.69	3.54
Maintenance portion of Oldham County	Point	0.03	0.03	0.03	0.03	0.03
	Area	0.83	0.85	0.87	0.91	0.94
	Mobile	1.74	1.38	1.18	1.00	0.82
	Nonroad	0.98	1.02	1.05	1.09	1.12
	Total	3.58	3.28	3.13	3.03	2.91
Total for KY portion of Louisville 1-hr O ₃ maintenance area	Point	31.52	31.93	31.93	31.83	31.52
	Area	18.94	19.10	19.27	19.47	19.64
	Mobile	39.56	30.82	26.57	20.96	15.43
	Nonroad	15.07	15.12	15.15	15.20	15.22
	Total	105.09	96.97	92.92	87.46	81.81
Maintenance Plan Decrease from 1999			8.12	12.17	17.63	23.28
Used for Motor Vehicle Emission Budget Safety Margin (See Section 8.0)						23.28
Remaining VOC Growth Allowance 2012						0.00

Table 7.3a
Louisville 1-Hour Maintenance Area
Maintenance Plan NO_x Emissions (tons per summer day) - 2003 Update
Without Emission Reduction Credits for VET Program after 2003 or Indiana I/M after 2006

County	Source Category	1999	2002	2005	2008	2012
Jefferson County	Point	116.74	98.95	46.24	47.64	47.85
	Area	0.75	0.75	0.76	0.76	0.76
	Mobile	81.82	70.28	58.14	42.94	26.59
	Nonroad	18.40	18.26	18.07	17.89	17.62
	Total	217.71	188.24	123.21	109.23	92.82
Maintenance portion of Bullitt County	Point	0.01	0.01	0.01	0.01	0.01
	Area	0.03	0.03	0.03	0.03	0.03
	Mobile	3.05	2.98	2.70	2.28	1.70
	Nonroad	0.78	0.81	0.85	0.88	0.91
	Total	3.87	3.83	3.59	3.20	2.65
Maintenance portion of Oldham County	Point	0.11	0.12	0.12	0.13	0.13
	Area	0.03	0.03	0.03	0.03	0.03
	Mobile	2.39	2.31	2.09	1.76	1.30
	Nonroad	0.77	0.80	0.82	0.86	0.88
	Total	3.30	3.26	3.06	2.78	2.34
Total for KY portion of Louisville 1-hr O ₃ maintenance area	Point	116.86	99.08	46.37	47.78	47.99
	Area	0.81	0.81	0.82	0.82	0.82
	Mobile	87.26	75.57	62.93	46.98	29.59
	Nonroad	19.95	19.87	19.74	19.63	19.41
Total		224.88	195.33	129.86	115.21	97.81
Maintenance Plan Decrease from 1999			29.55	95.02	109.67	127.07
Used for Motor Vehicle Emission Budget Safety Margin (See Section 8.0)						57.67
Remaining NO_x Growth Allowance (2012)						69.40

Continuation of DAQ- and APCD-Initiated Control Programs

The DAQ, APCD, and EPA have instituted programs that will remain enforceable and were submitted as part of the original maintenance plan to maintain air quality which meets the 1-hour ozone standard for the Kentucky portion of the Louisville 1-hour ozone attainment area. A DAQ- or APCD-initiated emission reduction program is required to be continued unless a demonstration is made that the projected emissions, without credit for emission reductions due to that emission reduction program, remain at or below the baseline of the maintenance plan, which would allow the EPA to approve a revision to the Kentucky SIP to remove that program.

In the original maintenance plan, the list of continued emission reduction programs included the improved basic VET Program in Jefferson County. The effect of the legislation enacted by the Kentucky General Assembly in 2002, codified as KRS 77.320(1), is that the VET Program will end by November 1, 2003. However, the VET Program will remain operating until November 1, 2003.

As stated earlier in this document, credit for VOC or NO_x mobile source emission reductions attributed to the VET Program will not be taken in the revised maintenance plan for the years 2005, 2008, and 2012.

However, that same legislation, codified in KRS 77.320(2) authorizes the consolidated local government to reestablish a VET Program if Jefferson County becomes nonattainment for an air quality standard for ozone, carbon monoxide, or nitrogen dioxide established by the EPA. The Louisville area will most likely be designated as nonattainment of the 8-hour ozone standard, and, based upon the best information released by the EPA regarding its draft 8-hour ozone standard implementation rule, the EPA may require an I/M program for Jefferson County.

As shown in Tables 7.2a and 7.3a, the maintenance plan remains valid without credit for emission reductions from the VET Program because the projected emissions would remain at or below the baseline. When the VET Program is ended and if an I/M program does not become a mandatory control measure for Jefferson County, a Kentucky SIP revision request will be prepared to remove the VET Program itself from the Kentucky SIP.

The maintenance plan requires that triennial reviews of actual emissions for the maintenance area will

be performed using the latest emission factors, models, and methodologies. The DAQ and APCD are scheduled to begin the triennial assessment for calendar year 2002 later in 2003. At the time of this periodic inventory, the Agencies would review the assumptions made for the purpose of the maintenance demonstration concerning projected growth of activity levels.

The January 18, 2002, memorandum from John S. Seitz, Director, OAQPS, and Margo Tsirigotis Oge, Director, OTAQ, entitled *Policy Guidance on the Use of MOBILE6 for SIP Development and Transportation Conformity*, a copy of which is in *Appendix M: Maintenance Plan: 2003 Update*, includes, in question 5, a general statement that the air pollution control agency must consider whether growth and control strategy assumptions for point, area, and non-road mobiles sources are still accurate. If these assumptions have not changed, then the original SIP emission inventories with the revised motor vehicle emission inventories can be submitted. This memorandum further provides that revising the other emissions inventories is not necessary if the maintenance plan continues to demonstrate maintenance with the MOBILE6-based motor vehicle emission inventories and the air pollution control agency can document that the growth assumptions for the other source categories continue to be valid and any minor updates would not change the overall conclusion of continued maintenance.

The first criterion would be satisfied if the relative emission reductions between the base year and the maintenance year are the same or greater using MOBILE6 than they were using MOBILE5. This criterion is met for the Louisville Maintenance Area. This can most easily be seen from versions of Tables 7.2 - 2003 Update and 7.3 - 2003 Update, included in *Appendix M*, that show both the original and revised VOC and NO_x, respectively, emission baselines and projections.

With respect to the second criterion, the APCD reviewed the 2001 Jefferson County point source inventories for VOC and NO_x, the most recent quality-assured point source emissions inventories, and compared the total emissions to the projected 2002 point source emissions contained in the maintenance plan. The total 2001 Jefferson County point source VOC emission was 27.49 tons per summer day (tpsd), 3.57 tpsd below the 31.06 tpsd projected for 2002. Similarly, the total 2001 Jefferson County point source NO_x emission was 86.38 tpsd, 12.57 tpsd below the 98.95 tpsd projected for 2002. Included in *Appendix M* are the Jefferson County documents *Point Source VOC*

Emissions for Year 2001 and NO_x Emissions Year 2001. With respect to Bullitt and Oldham Counties, the total 1999 point source VOC and NO_x emissions were 0.20 tpsd and 0.12 tpsd, respectively. These point source emissions were projected to have a very minor increase over the course of the maintenance plan. Any changes to the projected emissions for these point sources would have a negligible effect when compared to the significant point source reductions experienced in Jefferson County. The general economic climate would have similar effects on the industrial sector and the general population. Thus, it is reasonable to conclude that the growth assumptions for the other source categories continue to be valid and any minor updates would not change the overall conclusion of continued maintenance. A review of the completed 2002 triennial full emissions inventories would verify whether the maintenance plan emissions caps were being met.

Appendix M also includes the resubmitted point, area, and non-road mobile source emissions inventories from the June 26, 2001, document *Request for Redesignation to Attainment* that had been submitted by the Kentucky Natural Resources and Environmental Protection Cabinet to the EPA on July 9, 2001. Please note that the highway mobile source emissions and the grand total data included on the pages for Bullitt County and Oldham County should be ignored because these numbers have been replaced.

Kentucky Portion of the Louisville 1-Hour Ozone Maintenance Area

2003 Update

8.0 Regional Mobile Source Budgets for Transportation Conformity

The transportation conformity regulation, 40 CFR part 93 subpart A *Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Developed, Funded or Approved Under Title 23 U.S.C. or the Federal Transit Laws*, requires that mobile source emissions submitted to or approved for a state's SIP be used in determining conformity of transportation plans for that area. In the case of a maintenance area, the motor vehicle emissions projected for the last year of the maintenance plan (2012 for the Louisville 1-hour ozone maintenance area) become the motor vehicle emissions budgets (MVEBs).

This regulation, however, allows the addition of a *safety margin* to this out-year projection. A *safety margin* is defined as the amount by which the total projected emissions from all sources of a given pollutant are less than the total emissions that would satisfy the applicable requirement for reasonable further progress, attainment, or maintenance. In the case of the Louisville maintenance area, this means that the total of the MVEBs, including any added safety margins, plus the projected point, area, and nonroad source emissions, shall not exceed the levels of actual emissions in the 1999 baseline emissions inventories. Future transportation conformity analyses then use these established MVEBs to determine whether transportation conformity is met.

The DAQ, APCD, IDEM, KIPDA, and the other agencies involved in the transportation conformity consultation process have agreed with continuing the approach of maintaining regional MVEBs that had been used in the last attainment demonstration that was developed in 1999.

8.1 2003 Update

The future mobile source emissions used in the motor vehicle emission budgets (MVEBs) were calculated using MOBILE5b and credit was taken for the federal Tier 2/Sulfur Program [VOC for all

five counties (Jefferson County, Kentucky; a portion of Bullitt and Oldham Counties, Kentucky; and Clark and Floyd Counties, Indiana) and NO_x for Jefferson, Clark, and Floyd Counties]. Due to potential inaccuracies involved with using interim approximations based on national defaults and differing baselines to simulate emission factors that would result from proposed changes in MOBILE to be incorporated in MOBILE6, the EPA recognized these approximations may change once MOBILE6 became available when determining credit for the federal Tier 2/Sulfur Program. For this reason, the EPA established a policy that MVEBs budgets would not be approved by the EPA as being adequate for purposes of conformity unless the SIP also included an enforceable commitment to revise and resubmit the MVEBs using MOBILE6 methods within one year after the EPA releases MOBILE6 or, alternatively, within two years following the release of MOBILE6 provided that transportation conformity is not determined in the Louisville area without adequate MOBILE6-based MVEBs during the second year. The DAQ, the APCD, and KIPDA committed to revising and resubmitting the MVEBs using MOBILE6 within these time periods. This would also include revising the mobile source emissions in the maintenance plan.

Table 8.1a - 2003 Update shows a summary of the 1999 actual regional mobile source emissions for VOC and NO_x, the precursor emissions for ozone, the projected emissions for 2012, the out-year of the maintenance plans for both the Kentucky portion and the Indiana portion of the Louisville 1-hour ozone attainment area, the safety margin that is being added to the projected 2012 emissions, and the total regional MVEBs. Included in *Appendix M* is Table 8.1ac - 2003 Update that shows both the original (2001 document) and revised (2003 Revision 1 document) 1999 and 2012 budget VOC and NO_x emissions.

Because the total of the MVEBs, including any added safety margins, plus the projected point, area, and nonroad mobile source emissions, are required not to exceed the levels of actual emissions in the 1999 baseline emissions inventories, the safety margin for VOC recognizes the total 2.77 tons per summer day increase in 2012 in the regional point, area, and nonroad mobile sources over the 1999 baseline. Table 8.2 Louisville Maintenance Area Anthropogenic Emissions by State and Allowable Safety Margin summarizes the 1999 and 2012 emissions inventories, by state, for the point, area, mobile, and nonroad mobile sources and documents the allowable 2.77 tons per summer day VOC safety margin.

Table 8.1a
Louisville 1-Hour Ozone Attainment Area
Regional VOC and NO_x Motor Vehicle Emission Budgets - 2003 Update
(tons per summer day)

State	County	1999 VOC Baseline	2012 VOC Budget	1999 NO _x Baseline	2012 NO _x Budget
Kentucky portion of maintenance area	Jefferson	35.76	13.57	81.82	26.59
	Bullitt	2.06	1.04	3.05	1.70
	Oldham	1.74	0.82	2.39	1.30
	Total	39.56	15.43	87.26	29.59
Indiana portion of maintenance area	Clark	6.54	3.08	15.04	5.84
	Floyd	3.95	1.94	8.83	3.45
	Total	10.49	5.02	23.87	9.29
Total Region Mobile		50.05	20.45	111.13	38.88
Safety Margin		N/A	26.83	N/A	72.25
Region Total Baseline (1999)/Budget(2012)		50.05	47.28	111.13	111.13

Table 8.2
Louisville Maintenance Area
Anthropogenic Emissions by State
and Allowable Safety Margin (tons per summer day)

State	Source Category	VOC 1999	VOC 2012	NO_x 1999	NO_x 2012
Kentucky	Point	31.52	31.52	116.86	47.99
	Area	18.94	19.64	0.81	0.82
	Mobile	39.56	15.43	87.26	29.59
	Nonroad	15.07	15.22	19.95	19.41
	Total	105.09	81.81	224.88	97.81
Indiana	Point	4.16	4.88	26.04	12.38
	Area	17.67	18.14	8.39	9.24
	Mobile	10.49	5.02	23.87	9.29
	Nonroad	7.36	8.09	6.25	6.71
	Total	39.68	36.13	64.55	37.62
Total KY and IN		144.77	117.94	289.43	135.43
Total Reduction from 1999 to 2012 (Allowable Safety Margin)		26.83		154.00	
Mobile Source Reduction from 1999 to 2012		29.60		72.25	
Mobile Source Reduction Not Usable for Safety Margin		2.77		0.00	

Kentucky Portion of the Louisville 1-Hour Ozone Maintenance Area 2003 Update

9.0 Public Participation

9.1 2003 Update

A public comment period, during which written comments will be accepted on the revised maintenance plan for the Kentucky portion of the Louisville 1-hour ozone maintenance area and the Kentucky/Indiana regional motor vehicle emission budgets, both now containing motor vehicle emissions derived from the use of MOBILE6 instead of MOBILE5b, will be held from May 15, 2003, until June 13, 2003. A public hearing will be held on June 18, 2003. A copy of the legal notice is included in *Appendix N: Public Review Process: 2003 Update*. Documentation of the public hearing and any comments and responses will also be included in *Appendix N*.

Appendix M

2003 Update

1. KIPDA Method for Speed Estimation For the 2003 Mobile Source Budget Update And Subsequent Conformity Determinations
2. April 2003 changes to APCD MOBILE6 modeling
3. *Methodology Assumptions for MOBILE6.2 Highway Mobile Source Emissions Budget, Maintenance Portions of Bullitt and Oldham Counties*
4. MOBILE6 Inventories (4/23/2003 SIP Work)
5. *MOBILE6 SIP Conformity Modeling Suite, Emission Factors for Onroad Mobile Sources, Release Version 4/23/2003*
6. Compact Disc: *MOBILE6 SIP Conformity Modeling Suite, Emission Factors for Onroad Mobile Sources, Summer Only, Release Version 4/23/2003*
7. Highway Mobile Source Emissions Budget for Portions of Bullitt and Oldham Counties, Using MOBILE6.2
8. Table 7.1a, 1999 Baseline Actual VOC and NO_x Emissions Inventories - 2003 Update (showing both the original and revised emissions)
9. Table 7.2ac, Louisville 1-Hour Ozone Maintenance Area, Maintenance Plan VOC Emissions (tons per summer day) - 2003 Update Without Emission Reduction Credits for VET Program after 2003 or Indiana I/M after 2006 (showing both the original and revised emissions)
10. Table 7.3ac, Louisville 1-Hour Ozone Maintenance Area, Maintenance Plan NO_x Emissions (tons per summer day) - 2003 Update Without Emission Reduction Credits for VET Program after 2003 or Indiana I/M after 2006 (showing both the original and revised emissions)
11. Policy Guidance on the Use of MOBILE6 for SIP Development and Transportation Conformity
12. Point Source VOC Emissions for Year 2001
13. NO_x Emissions Year 2001
14. Resubmitted point, area, and non-road mobile source emissions inventories from the

June 26, 2001, document *Request for Redesignation to Attainment*

15. Table 8.1ac, Louisville 1-Hour Ozone Maintenance Area, Regional VOC and NO_x Motor Vehicle Emission Budgets - 2003 Update (tons per summer day) (showing both the original and revised emissions)

Appendix N

Public Review Process

1. Legal Notice, to be published Thursday, May 15, 2003, and Thursday, June 5, 2003, in *The Courier-Journal*